

## SECTION 13 3425

### PRESSURE RELIEF WALL PANELS

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#### LANL MASTER SPECIFICATION

When editing to suit project, author shall add job-specific requirements and delete only those portions that in no way apply to the activity (e.g., a component that does not apply). To seek a variance from applicable requirements, contact the ESM Structural POC.

When assembling a specification package, include applicable specifications from all Divisions, especially Division 1, General Requirements.

Delete information within "stars" during editing.

Specification developed for ML-3 projects. For ML-1 / ML-2, additional requirements and QA reviews are required.

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#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Pressure relief panels, frames, and attachment hardware for exterior walls of building spaces containing High Explosives operations.

##### 1.2 PERFORMANCE CRITERIA

- A. Design loads
  - 1. Wind load - 30 psf.
  - 2. Explosion load (from inside building) - 20 psf.
- B. Equip each hinged panel with a restraint/holdopen mechanism designed to cushion the panel's deceleration as the full open position is reached, and to minimize the development of a vacuum in the enclosed area when the heated gases cool.
- C. Design system to accommodate movement of components without buckling, failure of joint seals, undue stress on fasteners, or other detrimental effects when subjected to seasonal temperature ranges.
- D. Design system to accommodate tolerances of structure.
- E. Provide positive drainage to exterior for moisture entering or condensate occurring within the panel system.
- F. Design panel system to allow for manual resetting of panels after release.

### 1.3 SUBMITTALS

- A. Submit the following submittals in accordance with the requirements of Section 01 3300.
  - 1. Catalog data indicating panel components and construction, restraint mechanism, and mounting hardware.
  - 2. Manufacturer's installation instructions.
  - 3. Samples of manufacturer's standard range of colors for selection.
  - 4. Shop drawings indicating dimensions, panel layout, construction details, method of anchorage, method and sequence of installation.
  - 5. Test reports from testing at completion of installation.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Conspec Systems, Inc., Explovent system
- B. Construction Specialties, Ltd., Explovent system

### 2.2 MATERIALS

- A. For panels use 0.032 inch thick 3003 or 5005 stucco finish aluminum alloy sheet with Kynar 500 finish.
- B. Use 2 inch thick rigid foam insulation with flame/smoke rating of 25/450 in accordance with ASTM E84. Insulating value of panels must be R14 minimum.
- C. For exterior gasketing material use wool pile, fiber type, with continuous polypropylene center fin. For interior gasketing material use open cell foam with a polyethylene liner.
- D. For frame use 0.063 inch thick 6063-T52 alloy extruded aluminum with Kynar 500 finish to match panels.
- E. Use fasteners made of aluminum or stainless steel.

### 2.3 FABRICATION

- A. Form panels by laminating sheets of aluminum to each face of 2 inch thick foam insulation cores.
- B. Install panels in extruded aluminum frames with perimeter gasketing. Hinge panels at top edges, to swing out.
- C. Install calibrated release mechanisms that allow panels to open at specified

internal pressure.

- D. Install holdopen devices that prevent panels from closing when opened by explosion. Panels shall close automatically if opened by wind driven activation.
- E. Install retrieval devices that allow manual retrieval of opened panels.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Install panel assemblies in accordance with approved shop drawings and manufacturer's installation instructions.
- B. Protect metal surfaces in contact with cementitious materials with 1 coat of bituminous paint. Allow paint to dry before installation.
- C. Permanently attach frames to structure; aligned level and plumb to manufacturer's tolerances.

#### 3.2 TESTING

- A. When installation is complete, test each panel for operation at specified pressures and submit test reports to Contract Administrator.

### END OF SECTION

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Do not delete the following reference information:

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### FOR LANL USE ONLY

This project specification is based on LANL Master Specification 13 3425 Rev. 0, dated January 6, 2006.